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Aerospace News

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Saturday Launch Places Advanced Weather Watcher in Orbit

[NASA Feature, November 19, 2016, GOES-R Satellite]

In France: Le Figaro, November 23, 2016.

Below: The GOES-R satellite will be NOAA's most sophisticated weather observation spacecraft and is expected to improve forecasts and tracking substantially. Credits: NASA/Kim Shiflett.

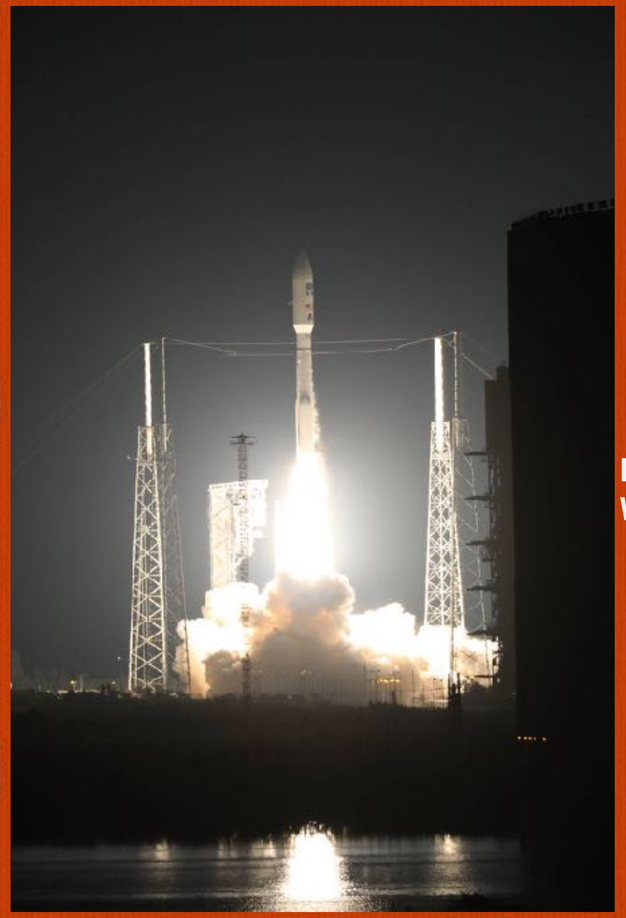

Image credit: Wikipedia, NASA (2014).

By Steven Siceloff, NASA's Kennedy Space Center, Florida

An Atlas V rocket rode a brilliant trail of orange and yellow flame skyward Saturday evening to send the nation's most advanced weather satellite into an orbit more than 22,000 miles above Earth.

"And liftoff of NOAA's GOES-R, America's most advanced weather eye in the sky," said Michael Curie, NASA's launch commentator, "elevating environmental intelligence to new heights and saving lives!"

Once operational, NOAA's GOES-R satellite will use the most advanced instruments of their kind to observe weather conditions on Earth to help forecasters improve the accuracy of their predictions. GOES-R will provide increased abilities to track storm intensity and development on Earth, and monitor solar and space weather. It is also equipped with sensors that can pick up signals from emergency beacons as part of the Search and Rescue Satellite Aided Tracking system.

The spacecraft is the 16th in the series of satellites developed to observe meteorological conditions on Earth. The first operational GOES satellite was launched in 1975 and provided a decade of useful service. NASA's Launch Services Program, based at Kennedy Space Center, began overseeing the processing and launches of GOES spacecraft in 2000, when an Atlas IIA placed GOES-L into space. These launches placed a constellation of GOES satellites – short for Geostationary Operational Environmental Satellite – into orbit where they can offer unblinking observations of the Western Hemisphere.

The GOES-R spacecraft will offer three times more spectral information, four times more spatial resolution and five time faster coverage than the previous GOES spacecraft. It also will deliver real-time total lightning maps and update imagery every 30 seconds when needed.

The GOES-R spacecraft, which will be renamed GOES-16 once it reaches orbit, is designed for up to 10 years of operation with about 18 years of fuel onboard the satellite.

Heading into the eastern sky at 6:42 p.m., the United Launch Alliance rocket and its GOES-R spacecraft climbed into the night smoothly. Assisted by four solid-fueled boosters, the two-stage Atlas V leapt off the launch pad at Space Launch Complex 41 on Florida's East Coast and headed out over the Atlantic Ocean. The 5-meter diameter payload fairing that protected the spacecraft during the flight through the atmosphere fell away as planned.

A few minutes after launch, the single-engine Centaur upper stage took over the job of propelling the three-ton satellite first into low-Earth orbit and then pushing it on its way to its designated geosynchronous transfer orbit.

About three-and-a-half hours after leaving Florida, the GOES-R spacecraft separated from the Centaur and flew on its own toward its planned orbit. It also unfurled the solar arrays that will provide power for the spacecraft throughout its life.

"Soon, we'll have an asset for forecasting that is basically a closed-circuit television looking at our weather," said Omar Baez, NASA's launch director for the GOES-R mission.